

Appl No.:10/643,063

Atty. Dkt.: UCF-372

Amendments to the Specification:

Please amend the paragraph on page 7 between lines 13 and 21 as follows:

There are common electrodes, which can be high voltage or low voltage, continuous or discontinuous, and the voltage applied does not depend on the input data during the operation of the TFT-LCD. There are pixel electrodes that can be continuous or discontinuous, and are the electrodes to which the voltage applied depends on the input data. A discontinuous electrode includes two or more adjacent finger-like extensions that are separated by a distance and connected together at one end. One common electrode can be located in the lower substrate or second substrate; in addition, a third electrode layer in the lower substrate can be discontinuous by design and collectively referred to as one layer, using one numerical reference in all figures presented herein. For example, Fig. 4 and Fig. 10 show a discontinuous common electrode layer 23 having three finger-like extensions separated by a distance and connected together at one end.

Please amend the paragraph on page 8 between lines 15 and 23 as follows:

In Figure 4, when the pixel voltage is 5V there is a bright state. Voltage of 5V is applied to pixel electrode 25; a new electric field pattern 40 is established quickly due to the fringing field shown in Figure 4. The continuous common electrode 21 in the top substrate has a voltage of 5V, while the discontinuous common electrode layer 23 in the bottom substrate has a voltage of 0V and the pixel electrode 25 has a voltage of 5V, as

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mentioned earlier. This leads to a new liquid crystal alignment state with different optical transmission, usually a bright state. The switching speed to this new state is also fast since it is driven by the electric field. Therefore, this new structure of TFT-LCD design leads to both fast turn-on and turn-off speeds since they both are electric-field driven.